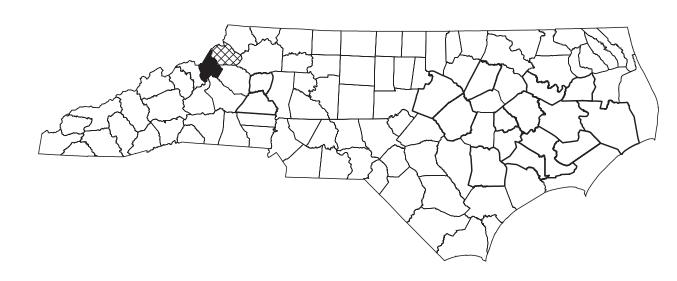
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### TRANSPORTATION MANAGEMENT PLAN

## AVERY & WATAUGA COUNTY

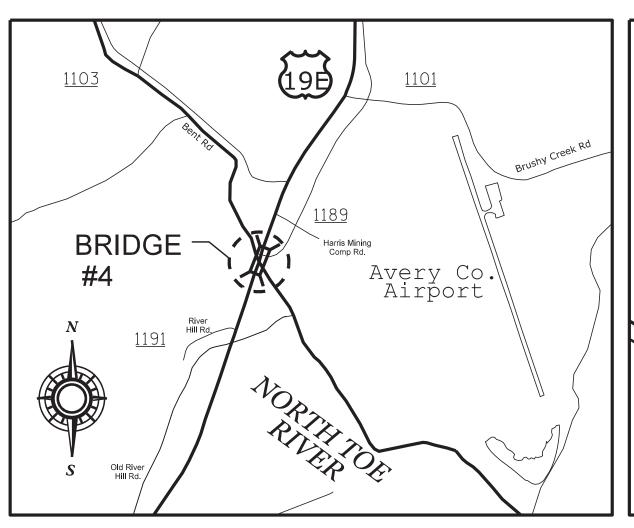


LOCATION: AVERY COUNTY BRIDGE #04 ON US 19 EAST. OVER THE NORTH TOE RIVER

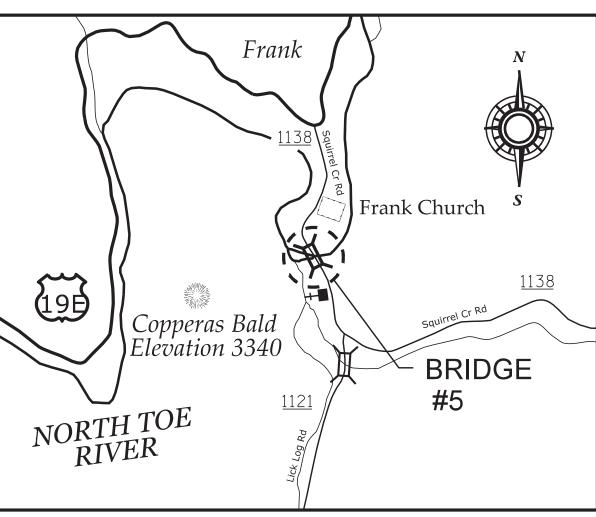
AVERY COUNTY BRIDGE #05 ON SR 1138 (SQUIRREL CREEK RD.), OVER THE NORTH TOE RIVER WATAUGA COUNTY BRIDGE #03 ON SR 1557 (SHULLS MILL RD.), OVER THE WATAUGA RIVER

TYPE OF WORK: BRIDGE PRESERVATION - DECK REPAIRS, STRUCTURAL STEEL REPAIRS, PAINTING

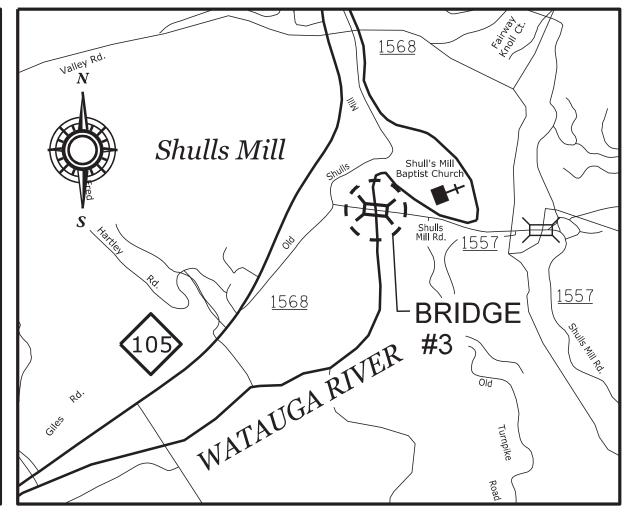
EXISTING BRIDGE STEEL, AND SUBSTRUCTURE REPAIRS



VICINITY MAP - AVERY COUNTY BRIDGE #050004



VICINITY MAP - AVERY COUNTY BRIDGE #050005



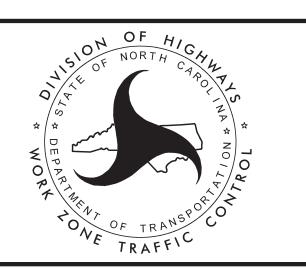
VICINITY MAP - WATAUGA COUNTY BRIDGE #940003

# WORK ZONE SAFETY & MOBILITY "from the MOUNTAINS to the COAST"

PLANS PREPARED BY:

ROBERT STONE II, P.E. PROJECT ENGINEER PATRICK HOLDER PROJECT DESIGN ENGINEER NCDOT CONTACTS:

DON PARKER, P.E. PROJECT ENGINEER ROGER GARRETT PROJECT DESIGN ENGINEER



#### INDEX OF SHEETS

<u>TITLE</u>

TMP - 1 TITLE SHEET, VICINITY MAP, AND INDEX OF SHEETS

LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, TMP-1A

AND LEGEND

TRANSPORTATION OPERATIONS PLAN: (MANAGEMENT STRATEGIES, GENERAL NOTES, AND LOCAL NOTES) TMP-1B

AVERY 04 TYPICAL SECTION TMP-2

TMP-3 & 4 AVERY 04 STAGE I TMP-5 & 6 AVERY 04 STAGE II

SHEET NO.

TMP - 7 AVERY 05 TYPICAL SECTION

TMP-8 & 9 AVERY 05 STAGE I TMP-10 & 11 AVERY 05 STAGE II

TMP - 12 WATAUGA 03 TYPICAL SECTION

TMP-13 & 14 WATAUGA 03 STAGE I TMP-15 & 16 WATAUGA 03 STAGE II

> **DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED**

PLANS PREPARED BY:

Raleigh, NC 27606
Tel. 919-854-0344 Fax. 919-854-0355
NC License No. F-0765

APPROVED: Robert W. Stone II DATE:\_\_\_\_ SEAL

3

TMP-1

PROJ. REFERENCE NO. SHEET NO. TMP-1A 15BRP.33

#### ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" -N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2018 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD.	NO.	<u>TIT</u>	LE

1101.01 WORK ZONE WARNING SIGNS

1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1150.01	FLAGGING DEVICES
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS

1205.02 PAVEMENT MARKINGS - TWO LANE AND MULTILANE ROADWAYS

#### **LEGEND**

#### **GENERAL**

DIRECTION OF TRAFFIC FLOW

--- EXIST. PVMT.

NORTH ARROW

PROPOSED PVMT.

TEMP. SHORING (LOCATION PURPOSES ONLY)



WORK AREA

#### SIGNALS



R P O PORTABLE TEMPORARY SIGNAL D A D DRIVEWAY ASSISTANT DEVICE



#### PAVEMENT MARKINGS

—— EXISTING LINES

TEMPORARY LINES

#### TRAFFIC CONTROL DEVICES



DRUM

FLAGGER

#### TEMPORARY SIGNING

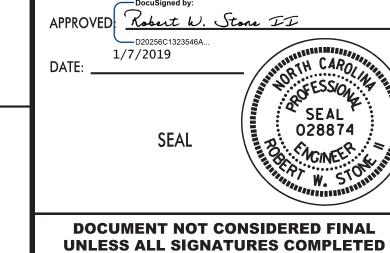
STATIONARY SIGN

#### TEMPORARY PAVEMENT MARKINGS

PAINT 24"

P2

WHITE STOP BAR



ROADWAY STANDARD DRAWINGS & LEGEND

5540 Centerview Drive, Suite 305 Raleigh, NC 27606 Tel. 919-854-0344 Fax. 919-854-0355 NC License No. F-0765

PROJ. REFERENCE NO. SHEET NO. 15BRP.33 TMP-1B

#### GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS, AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS OR RESULT IN DUPLICATE OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING, OR REMOVAL OF DEVICES AS DIRECTED BY THE ENGINEER.

THE FOLLOWING GENERAL NOTES APPLY TO ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT EXCEPT WHEN OTHERWISE NOTED IN THE PLAN OR DIRECTED BY THE ENGINEER.

#### LANE CLOSURE TIME RESTRICTIONS

A. DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAMES
ALL ROADS

#### HOLIDAY

- 1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES AS DIRECTED BY THE ENGINEER.
- 2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 6 A.M. DECEMBER 31st TO 6 P.M. JANUARY 2nd. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6 P.M. THE FOLLOWING TUESDAY.
- 3. FOR EASTER, BETWEEN THE HOURS OF 6 A.M. THURSDAY AND 6 P.M. MONDAY.
- 4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6 A.M. FRIDAY TO 6 P.M. TUESDAY.
- 5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 6 P.M. THE DAY AFTER INDEPENDENCE DAY. IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN BETWEEN THE HOURS OF 6 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 6 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- 6. FOR LABOR DAY, BETWEEN THE HOURS OF 6 A.M. FRIDAY AND 6 P.M. MONDAY.
- 7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6 A.M. TUESDAY TO 6 P.M. MONDAY.
- 8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6 P.M. THE FOLLOWING TUESDAY THE WEEK AFTER CHRISTMAS.
- B. DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVEL WAY UNLESS THE HAULING OPERATION IS PROTECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.
- C. DO NOT CLOSE OR NARROW LANES AS FOLLOWS:

ROAD NAMES

DAY AND TIME RESTRICTIONS

HWY 19E

- 1. DURING SCHOOL YEAR, MONDAY THROUGH FRIDAY, BETWEEN 6 A.M. TO 9 A.M. AND 2 P.M. TO 5 P.M.
- 2. DURING THE MONTH OF OCTOBER ON WEEKENDS BETWEEN 4 P.M. FRIDAY TO 9 A.M. MONDAY, DUE TO LEAVES CHANGING.

#### LANE CLOSURE REQUIREMENTS

- D. REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.
- E. WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWING, OR AS DIRECTED BY THE ENGINEER.
- F. DO NOT INSTALL MORE THAN ONE LANE CLOSURE, IN ANY DIRECTION, ON ALL ROADS.

#### SIGNING

- G. INSTALL ADVANCED WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE(3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
- H. PROVIDE PERMANENT SIGNING.
- . PROVIDE DETOUR SIGNING WITHIN AND/OR OFF THE PROJECT LIMITS.
- J. COVER OR REMOVE ALL DETOUR SIGNS OUTSIDE THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.
- K. ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

#### PAVEMENT EDGE DROP-OFF REQUIREMENTS

L. BACKFILL AT A 6:1 SLOPE UP TO EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE DEPARTMENT.

M. DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT IN ADVANCE AND A MINIMUM OF ONCE EVERY HALF MILE THOUGHOUT THE UNEVEN AREA.

#### PAVEMENT MARKING AND MARKERS

N. INSTALL FINAL PAVEMENT MARKING AND PAVEMENT MARKERS AS FOLLOWS:

ROAD NAMES MARKING

ALL ROADS MATCH EXISTING

O. INSTALL TEMPORARY PAVEMENT MARKING AND PAVEMENT MARKERS AS FOLLOWS:

ROAD NAMES
ALL ROADS

MARKING
REMOVABLE TYPE

- P. TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- Q. REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATIONS.

#### TRAFFIC CONTROL DEVICES

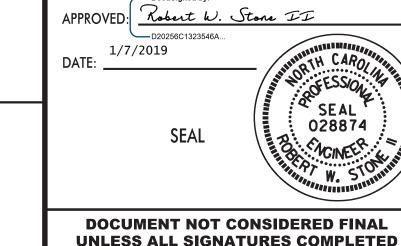
5540 Centerview Drive, Suite 305

Tel. 919-854-0344 Fax. 919-854-0355

Raleigh, NC 27606

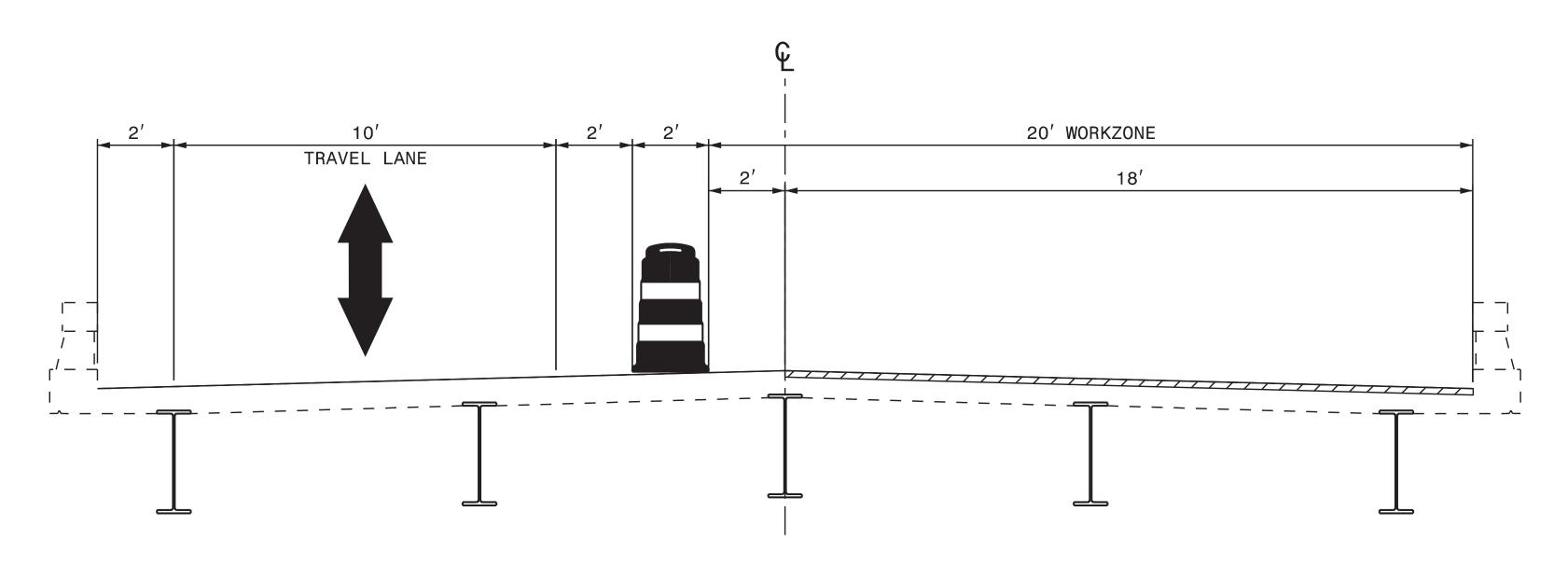
NC License No. F-0765

- R. SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED, REFER TO SECTION 1180.01 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- S. PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN (R11-2) ATTACHED, OF SUFFICIENT LENGTH TO CLOSE THE ENTIRE ROADWAY.
- T. PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 1000 FT CENTERS WHEN UPOPENDED LANES ARE CLOSED TO TRAFFIC.

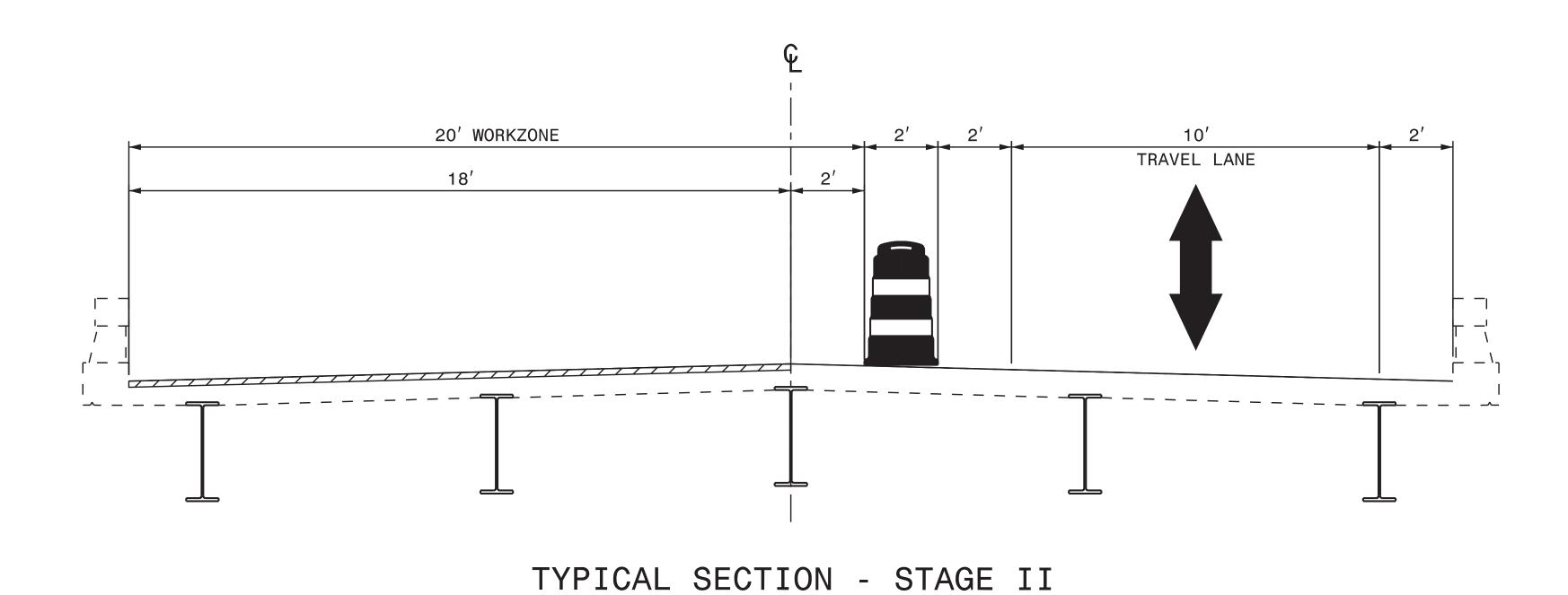


OF NORTH CARPOLLER NO. LEPANOLLER NO. LEPANOLUR NO. LEPAN

PROJ. REFERENCE NO. SHEET NO. 15BPR.33 TMP-2



TYPICAL SECTION - STAGE I



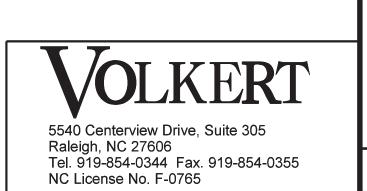
#### TRAFFIC CONTROL STAGING NOTES:

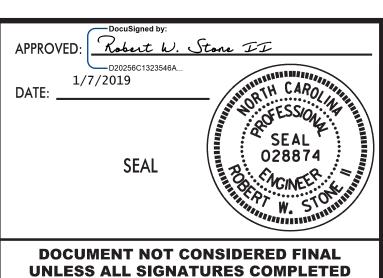
#### STAGE I:

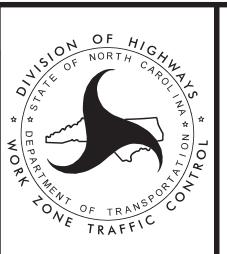
- 1. USE TMP-2, TMP-3, TMP-4, AND ROADWAY STANDARD DRAWING (RSD) 1101.02 SHEET 1 OF 14, TO PLACE ADVANCED WARNING SIGNS AND TRAFFIC CONTROL DEVICES.
- 2. RECORD EXISTING PAVEMENT MARKINGS.
- 3. COMPLETE STAGE I BRIDGE WORK.
- 4. REPLACE ANY EXISTING PAVEMENT MARKINGS THAT WERE OBLITERATED DURING CONSTRUCTION.
- 5. REMOVE ALL TRAFFIC CONTROL DEVICES. COVER OR REMOVE ALL ADVANCED WARNING SIGNS AND RETURN TRAFFIC TO ITS EXISTING PATTERN.

#### STAGE II:

- 1. USE TMP-2, TMP-5, TMP-6, AND ROADWAY STANDARD DRAWING (RSD) 1101.02 SHEET 1 OF 14, TO PLACE ADVANCED WARNING SIGNS AND TRAFFIC CONTROL DEVICES.
- 2. RECORD EXISTING PAVEMENT MARKINGS.
- 3. COMPLETE STAGE II BRIDGE WORK.
- 4. REPLACE ANY EXISTING PAVEMENT MARKINGS THAT WERE OBLITERATED DURING CONSTRUCTION.
- 5. REMOVE ALL TRAFFIC CONTROL DEVICES. COVER OR REMOVE ALL ADVANCED WARNING SIGNS AND RETURN TRAFFIC TO ITS EXISTING PATTERN.

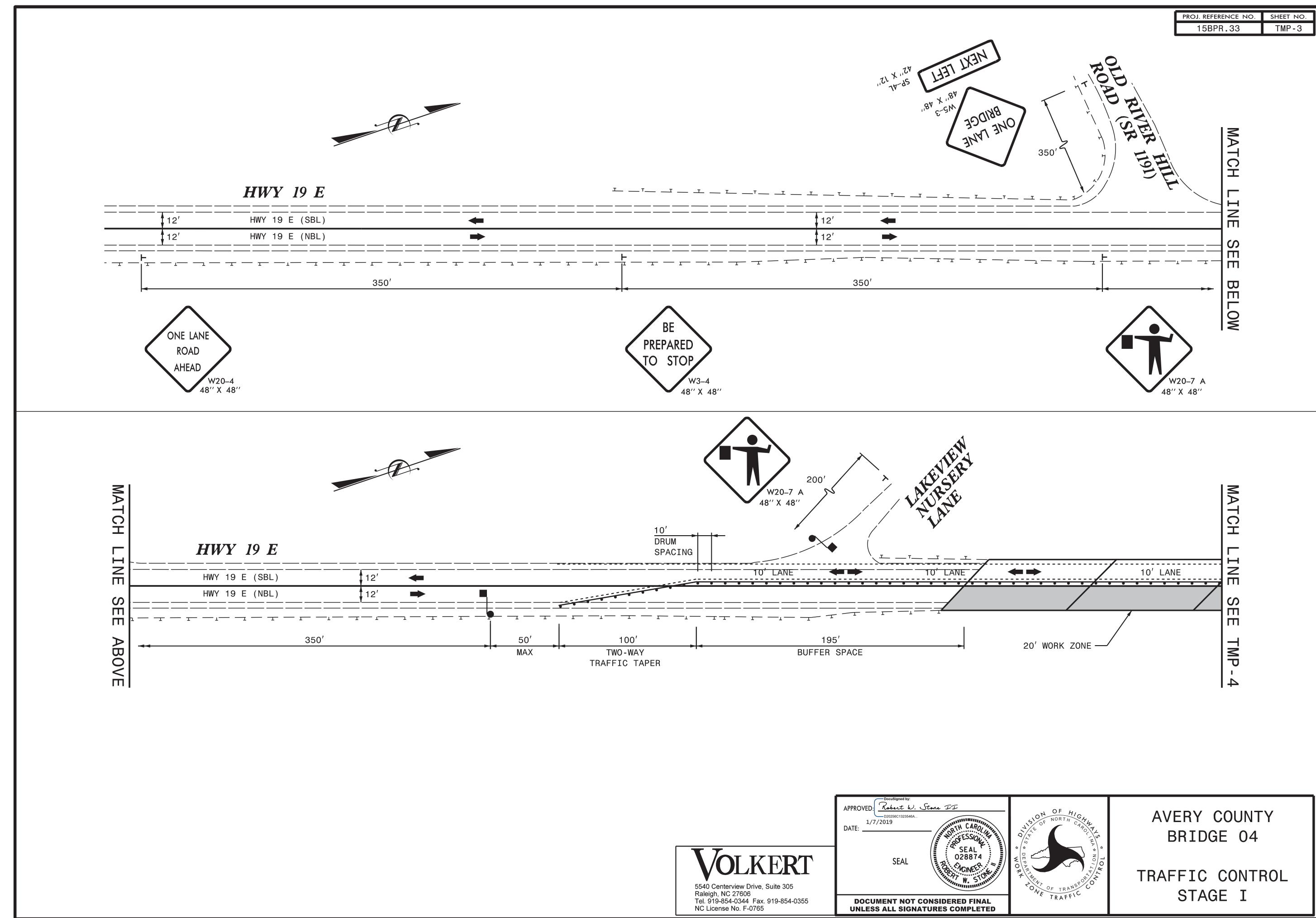


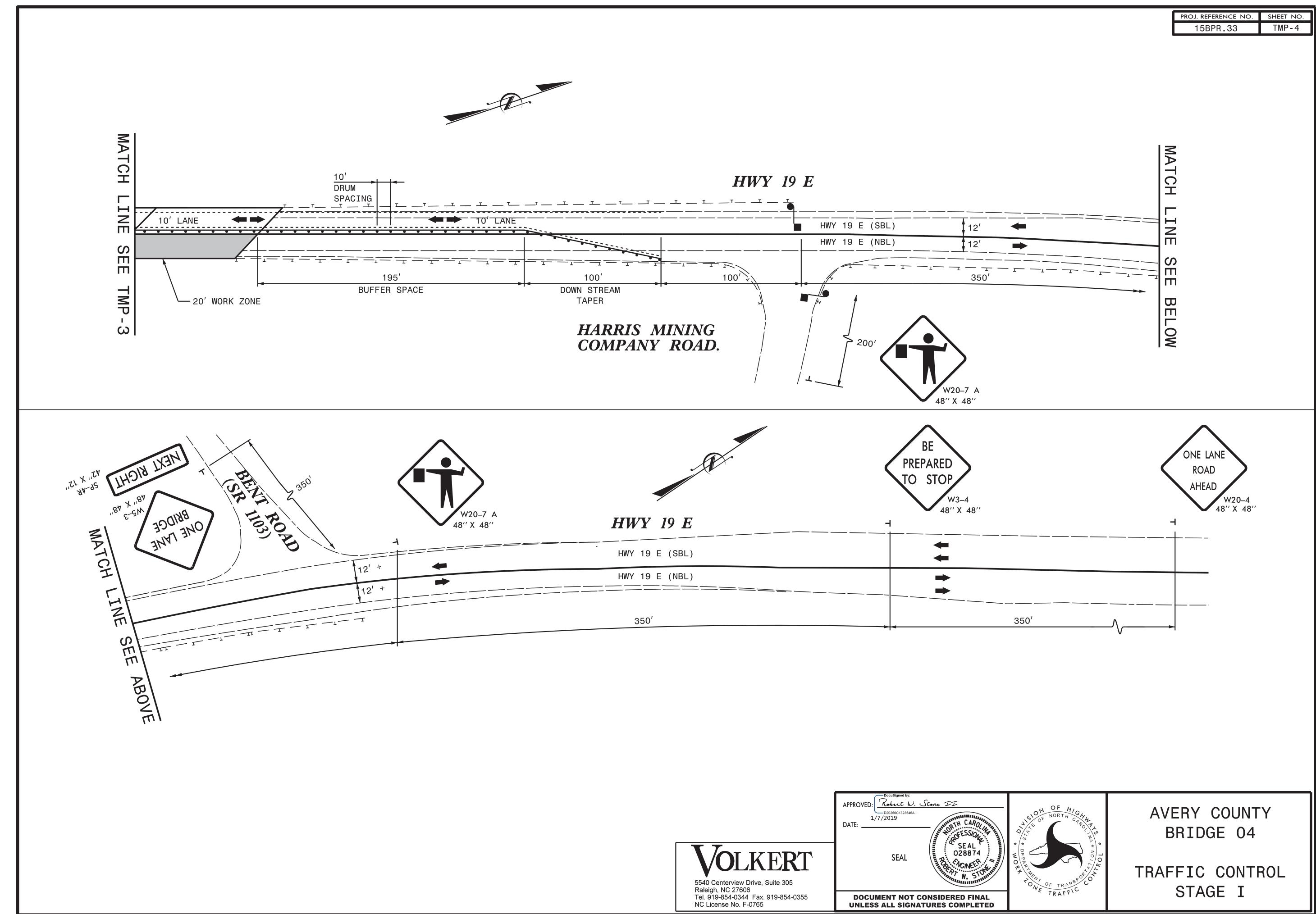


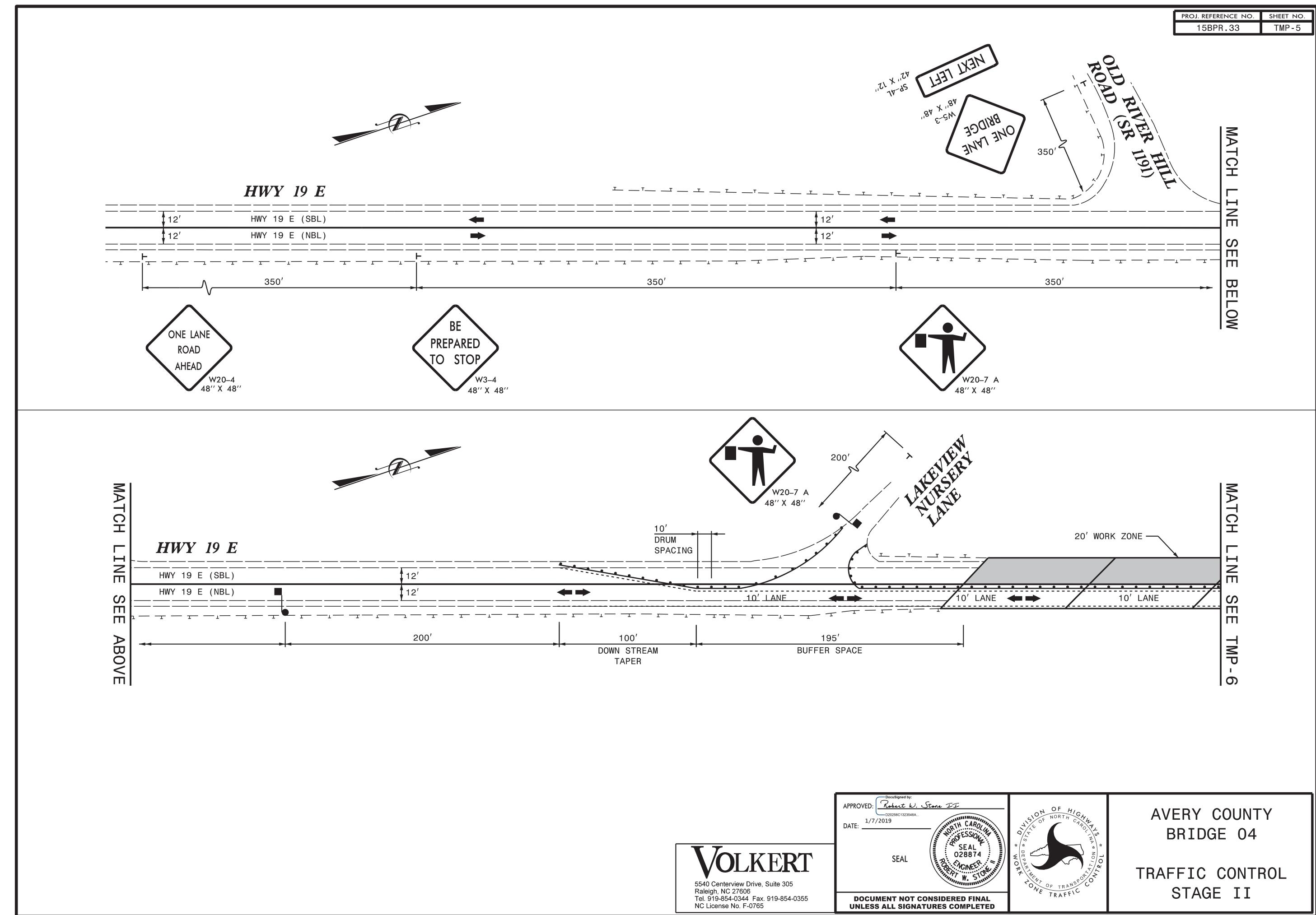


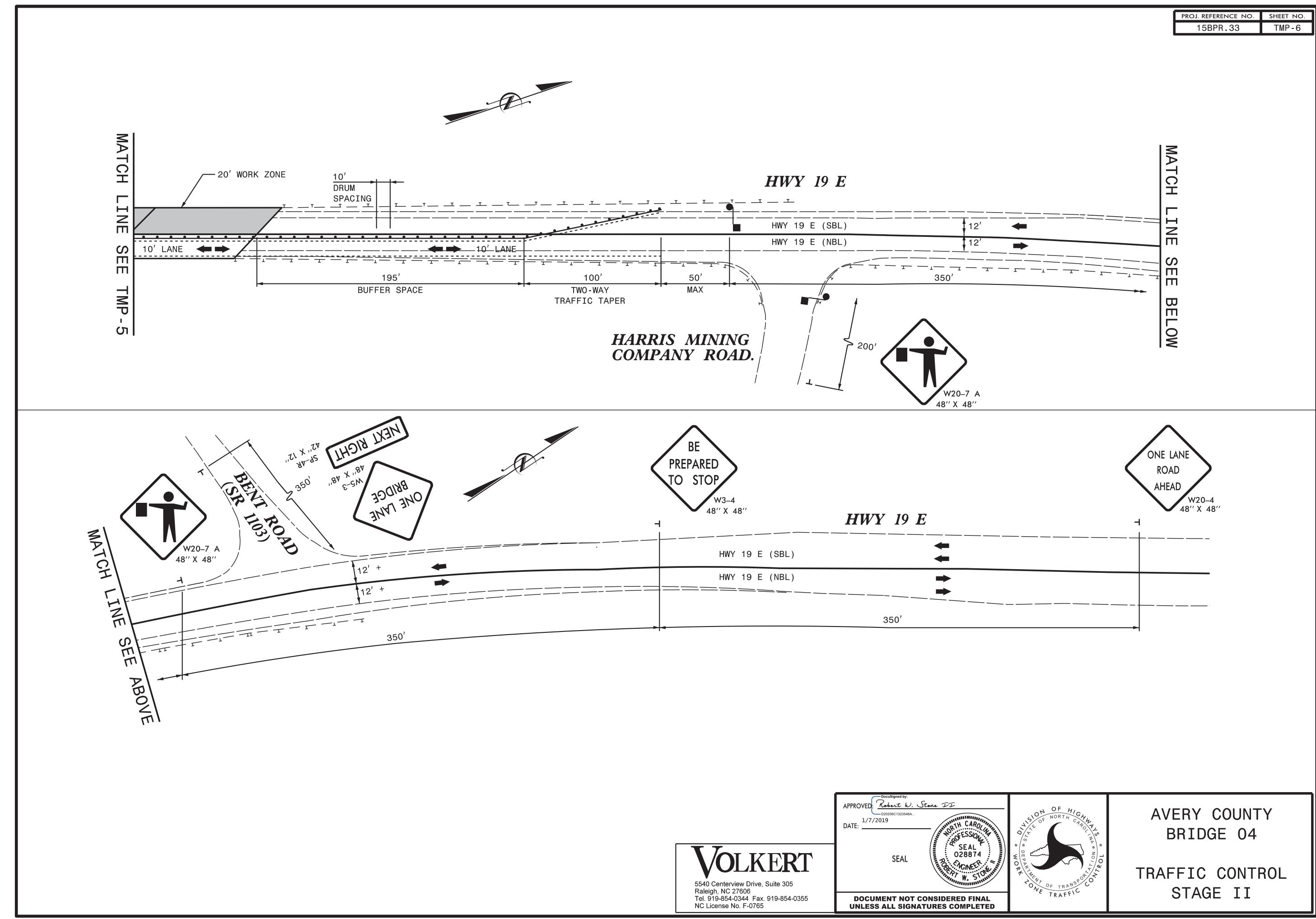
AVERY COUNTY BRIDGE 04

TRAFFIC CONTROL STAGING

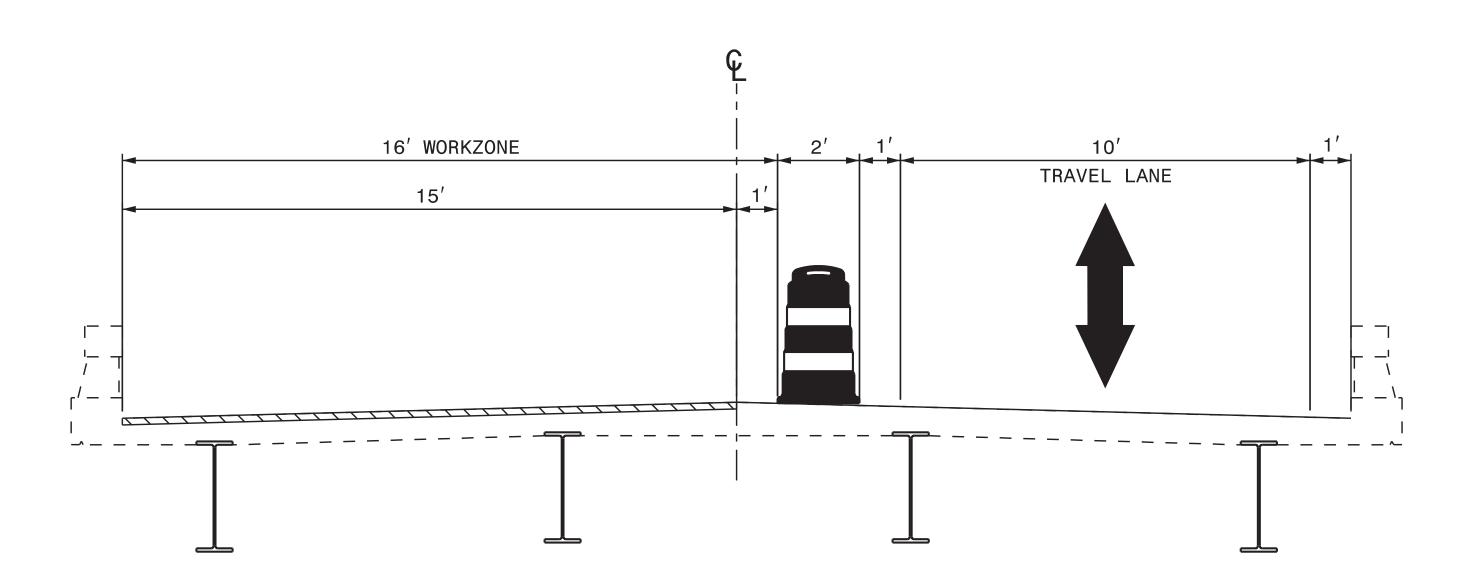




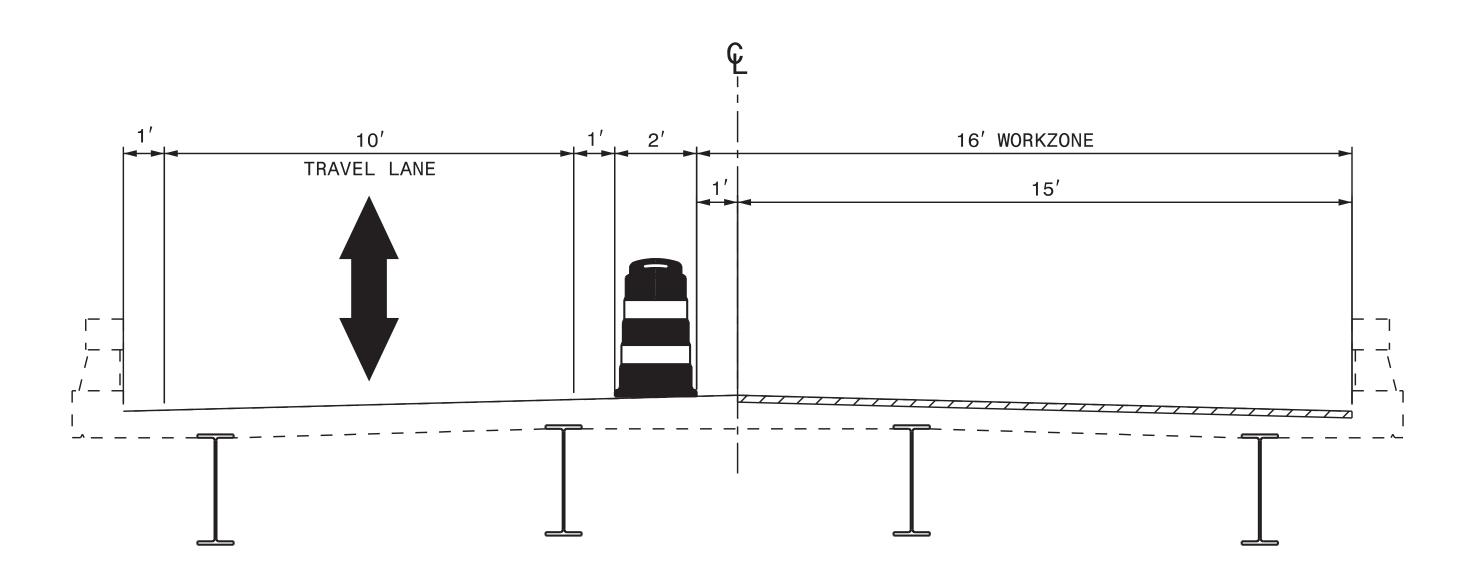




PROJ. REFERENCE NO. 15BPR.33 TMP - 7



#### TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II

#### TRAFFIC CONTROL STAGING NOTES:

#### STAGE I:

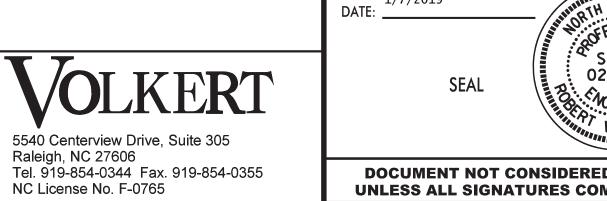
1. USE TMP-7, TMP-8, TMP-9, AND ROADWAY STANDARD DRAWING (RSD) 1101.02 SHEET 14 OF 14, TO PLACE ADVANCED WARNING SIGNS, TRAFFIC CONTROL DEVICES AND INSTALL TEMPORARY PAVEMENT MARKINGS.

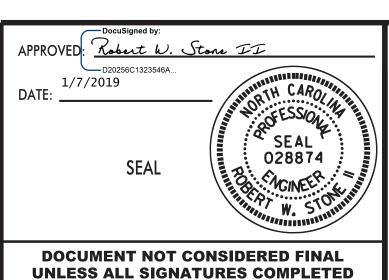
- 2. RECORD EXISTING PAVEMENT MARKINGS.
- 3. COMPLETE STAGE I BRIDGE WORK.
- 4. REPLACE ANY EXISTING PAVEMENT MARKINGS THAT WERE OBLITERATED DURING CONSTRUCTION.
- 5. REMOVE ALL TRAFFIC CONTROL DEVICES, AND TEMPORARY PAVEMENT MARKINGS. COVER OR REMOVE ALL ADVANCED WARNING SIGNS AND RETURN TRAFFIC TO ITS EXISTING PATTERN.

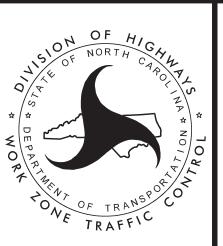
#### STAGE II:

1. USE TMP-7, TMP-10, TMP-11, AND ROADWAY STANDARD DRAWING (RSD) 1101.02 SHEET 14 OF 14, TO PLACE ADVANCED WARNING SIGNS, TRAFFIC CONTROL DEVICES AND INSTALL TEMPORARY PAVEMENT MARKINGS.

- 2. RECORD EXISTING PAVEMENT MARKINGS.
- 3. COMPLETE STAGE II BRIDGE WORK.
- 4. REPLACE ANY EXISTING PAVEMENT MARKINGS THAT WERE OBLITERATED DURING CONSTRUCTION.
- 5. REMOVE ALL TRAFFIC CONTROL DEVICES AND TEMPORARY PAVEMENT MARKINGS. COVER OR REMOVE ALL ADVANCED WARNING SIGNS AND RETURN TRAFFIC TO ITS EXISTING PATTERN.



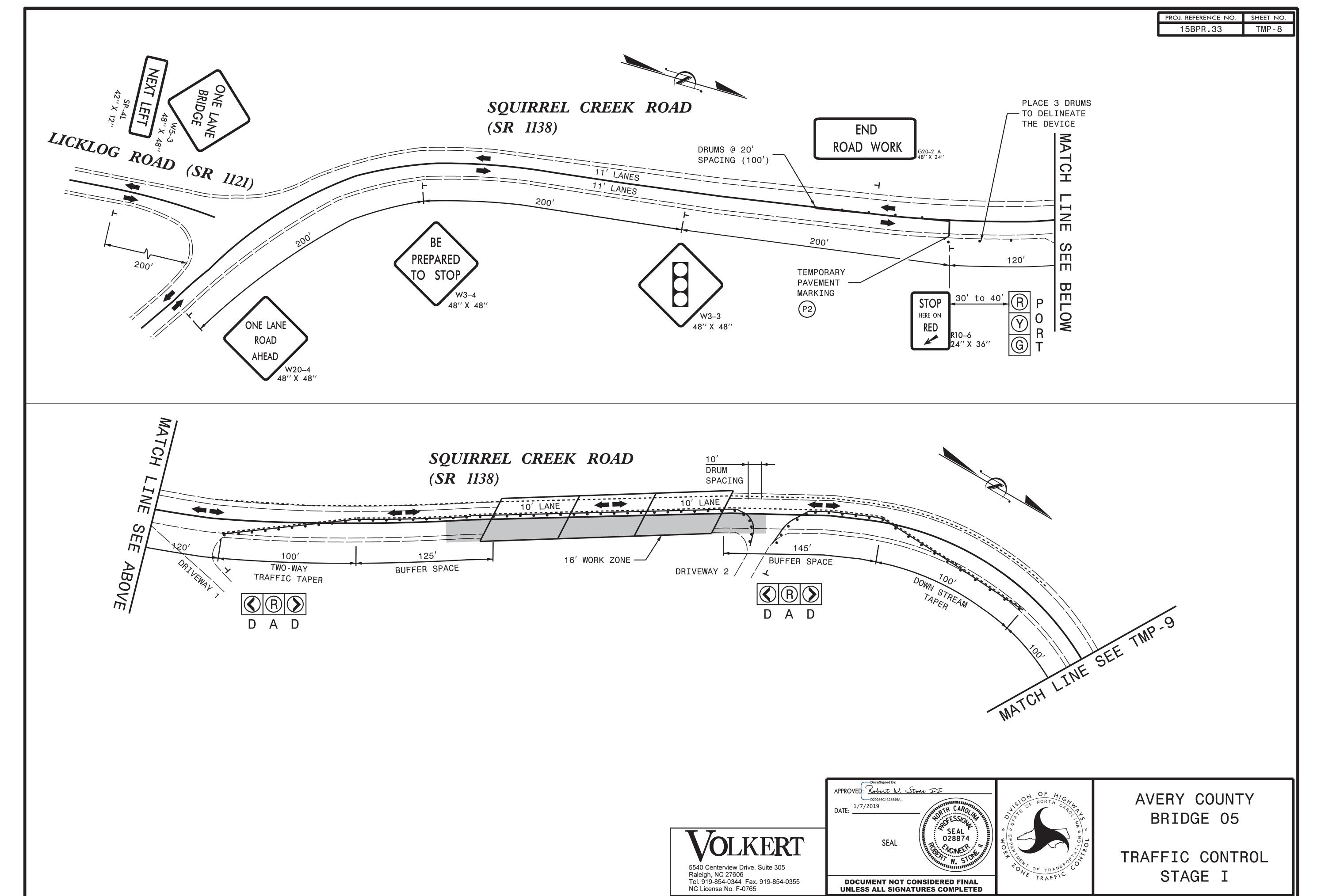


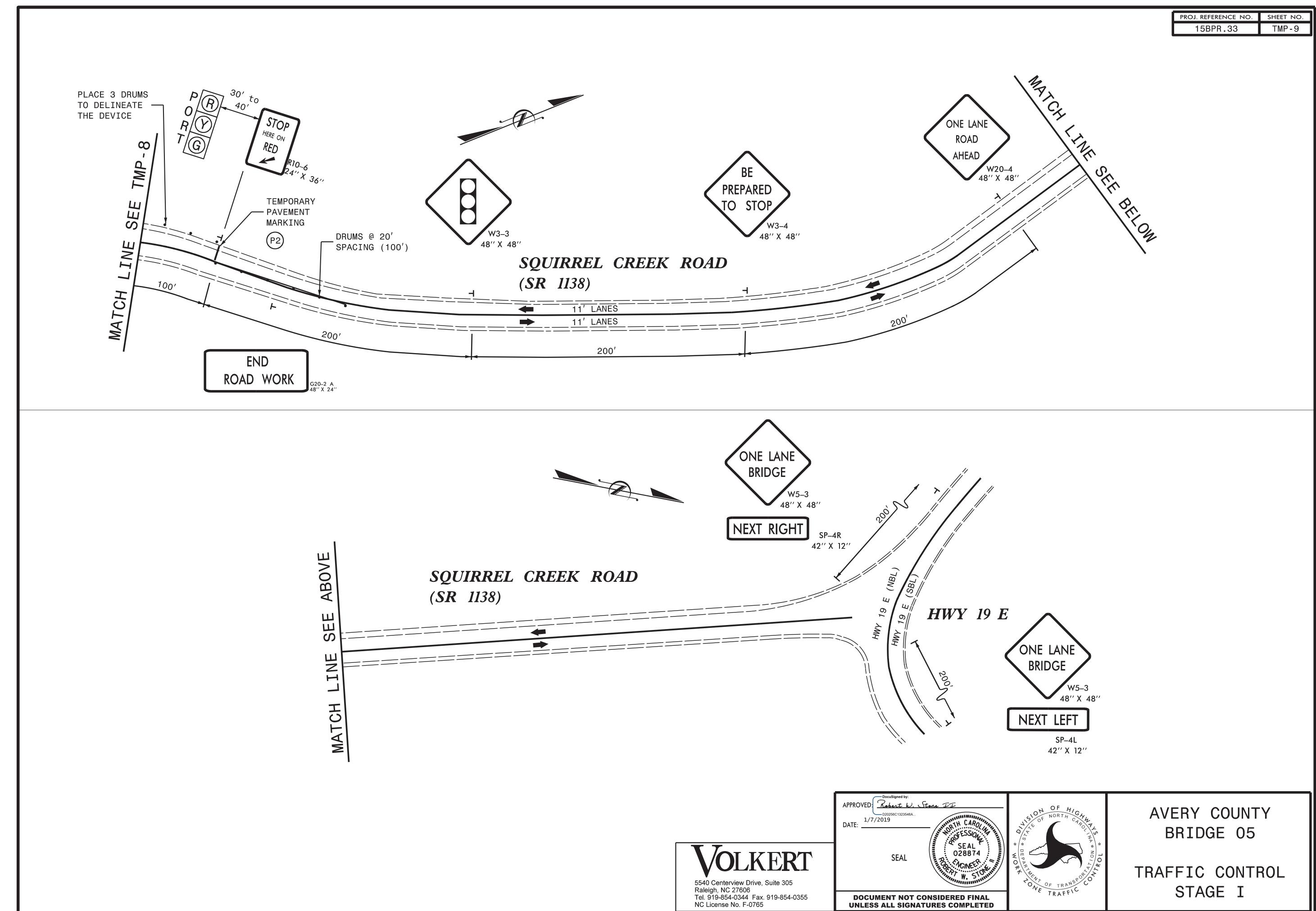


AVERY COUNTY BRIDGE 05

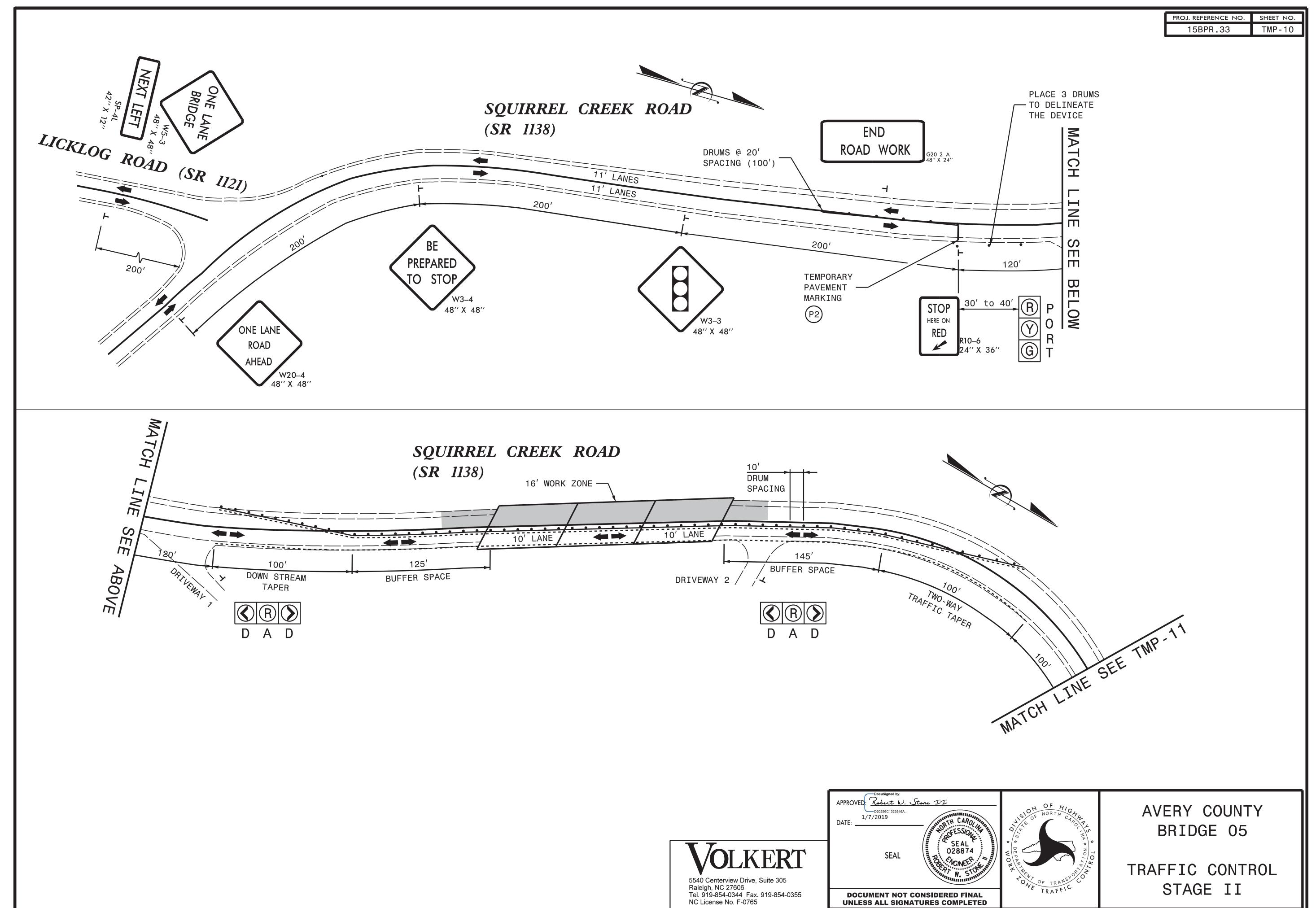
TRAFFIC CONTROL STAGING

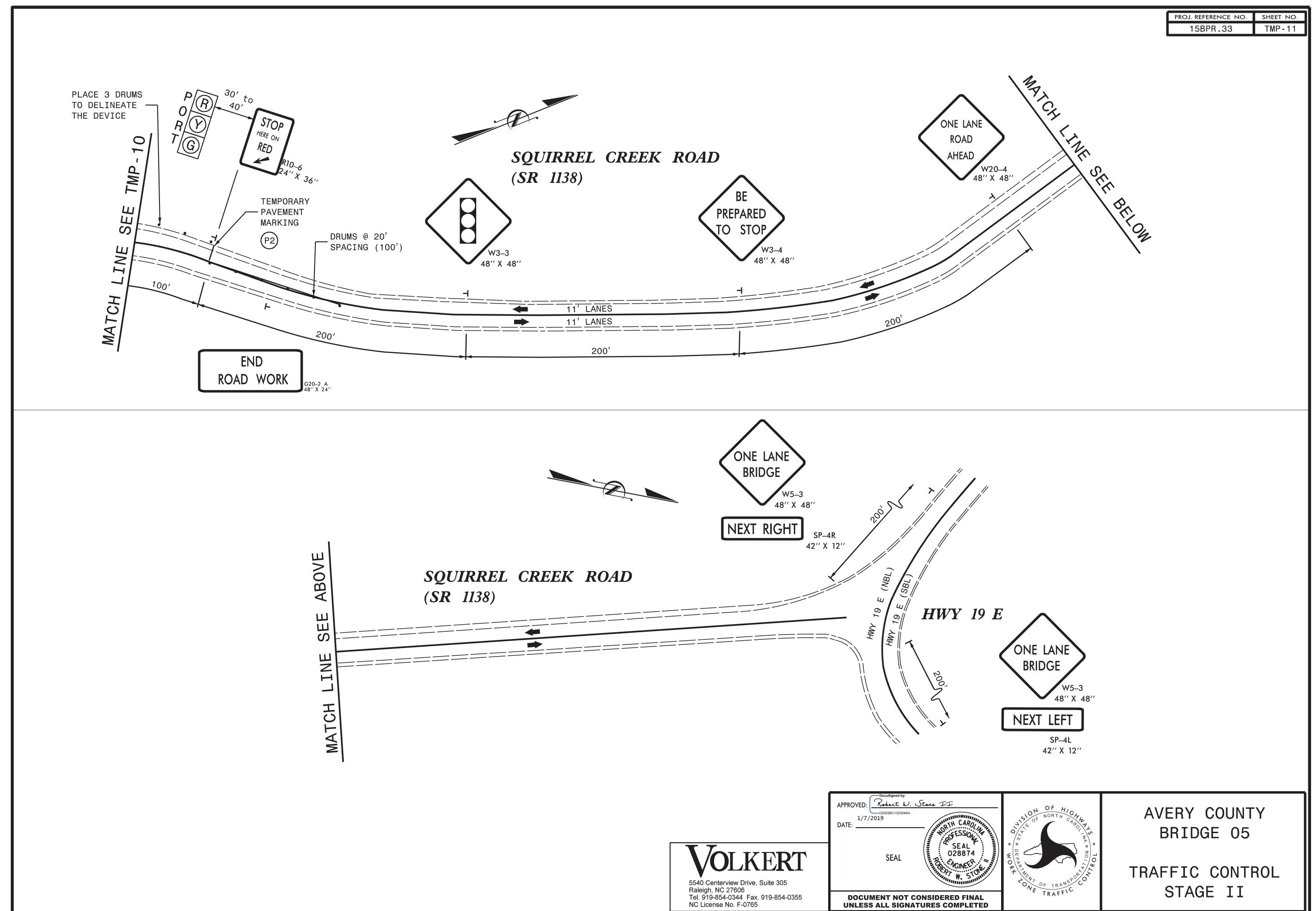
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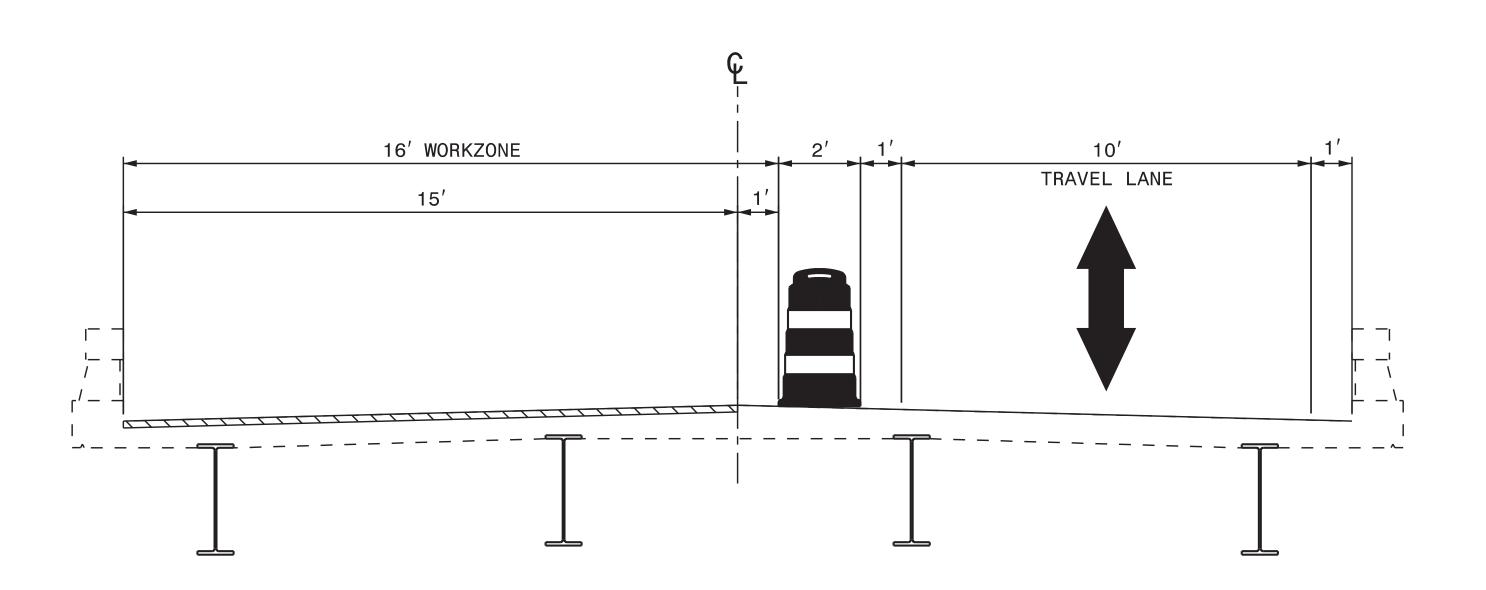


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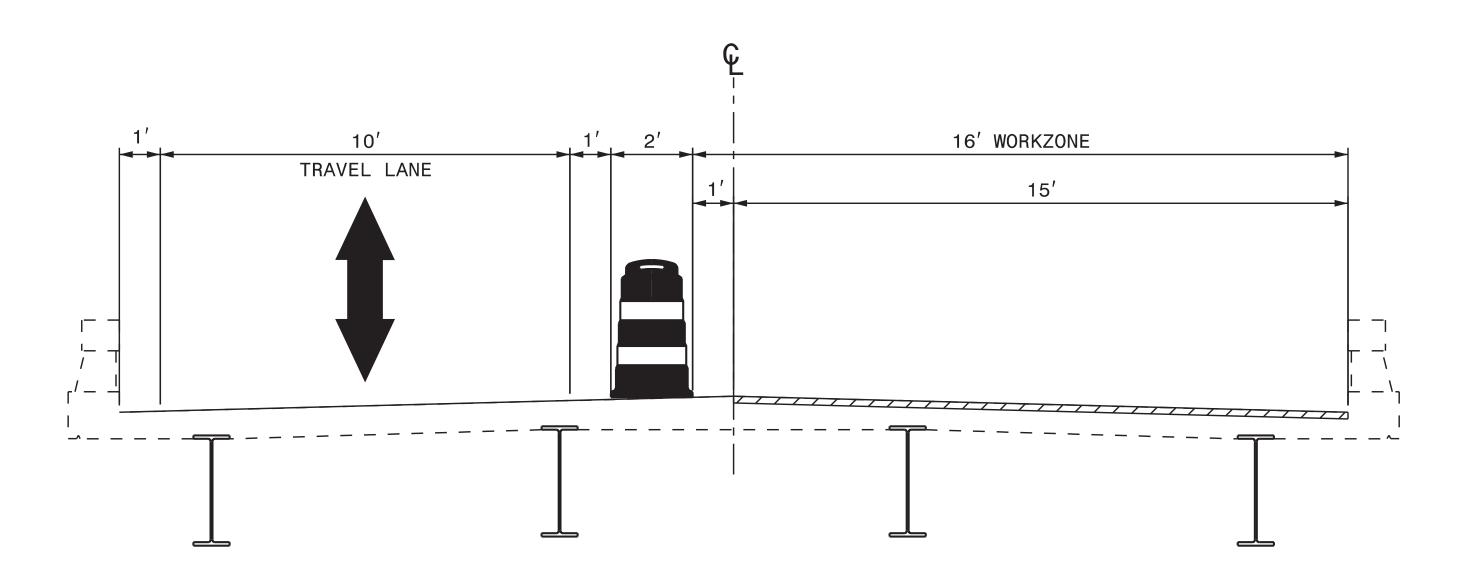




PROJ. REFERENCE NO. SHEET NO. 15BPR.33 TMP-12



#### TYPICAL SECTION - STAGE I



TYPICAL SECTION - STAGE II

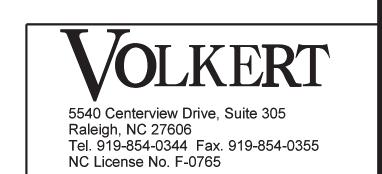
#### TRAFFIC CONTROL STAGING NOTES:

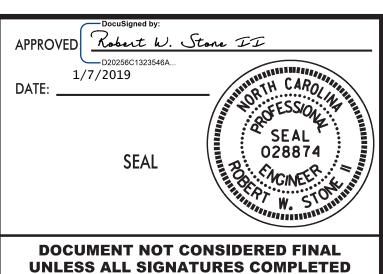
#### STAGE I:

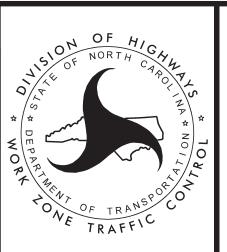
- 1. USE TMP-12, TMP-13, TMP-14, AND ROADWAY STANDARD DRAWING (RSD) 1101.02 SHEET 14 OF 14, TO PLACE ADVANCED WARNING SIGNS, TRAFFIC CONTROL DEVICES AND INSTALL TEMPORARY PAVEMENT MARKINGS.
- 2. RECORD EXISTING PAVEMENT MARKINGS.
- 3. COMPLETE STAGE I BRIDGE WORK.
- 4. REPLACE ANY EXISTING PAVEMENT MARKINGS THAT WERE OBLITERATED DURING CONSTRUCTION.
- 5. REMOVE ALL TRAFFIC CONTROL DEVICES AND TEMPORARY PAVEMENT MARKINGS. COVER OR REMOVE ALL ADVANCED WARNING SIGNS AND RETURN TRAFFIC TO ITS EXISTING PATTERN.

#### STAGE II:

- 1. USE TMP-12, TMP-15, TMP-16, AND ROADWAY STANDARD DRAWING (RSD) 1101.02 SHEET 14 OF 14, TO PLACE ADVANCED WARNING SIGNS, TRAFFIC CONTROL DEVICES AND INSTALL TEMPORARY PAVEMENT MARKINGS.
- 2. RECORD EXISTING PAVEMENT MARKINGS.
- 3. COMPLETE STAGE II BRIDGE WORK.
- 4. REPLACE ANY EXISTING PAVEMENT MARKINGS THAT WERE OBLITERATED DURING CONSTRUCTION.
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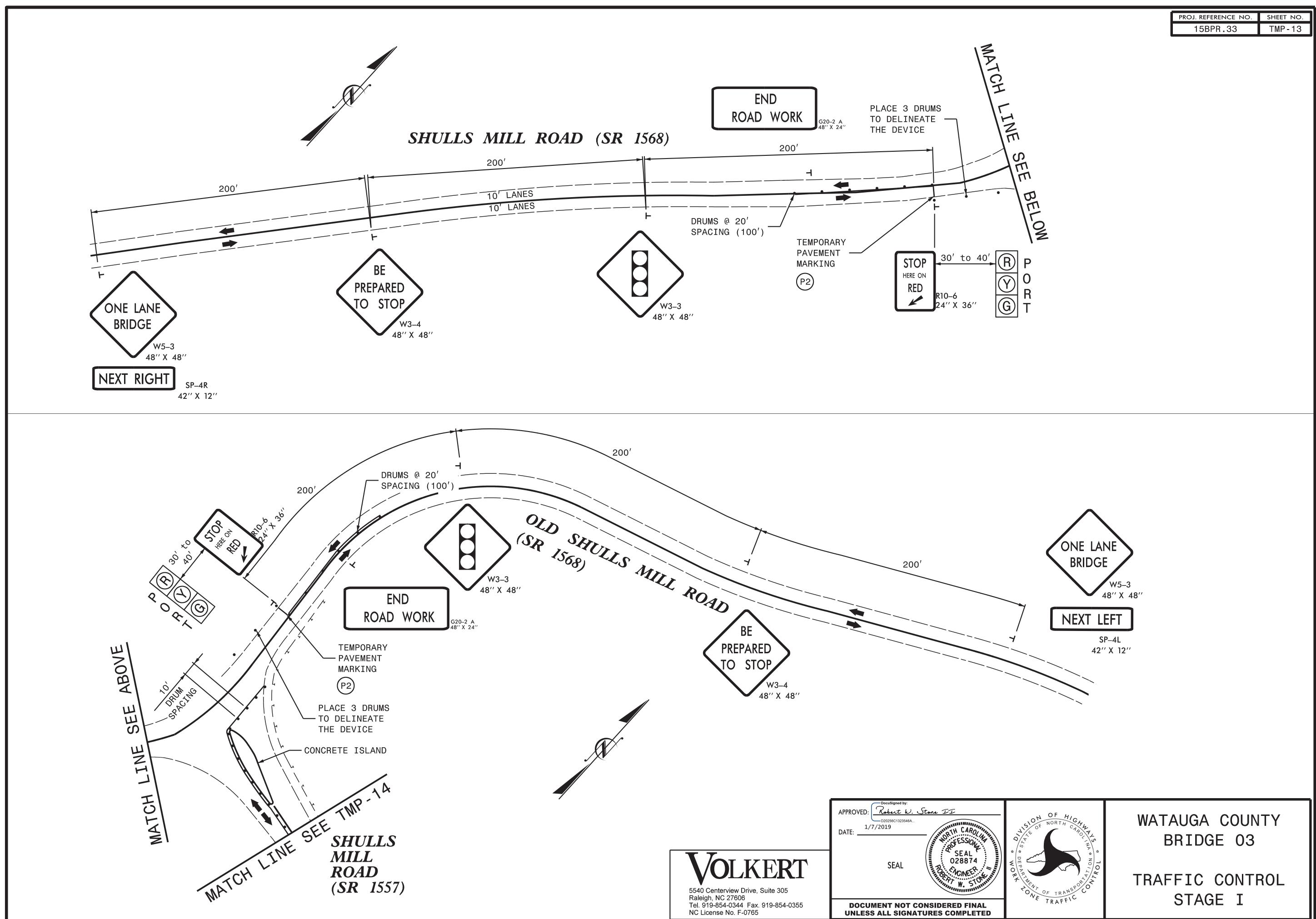


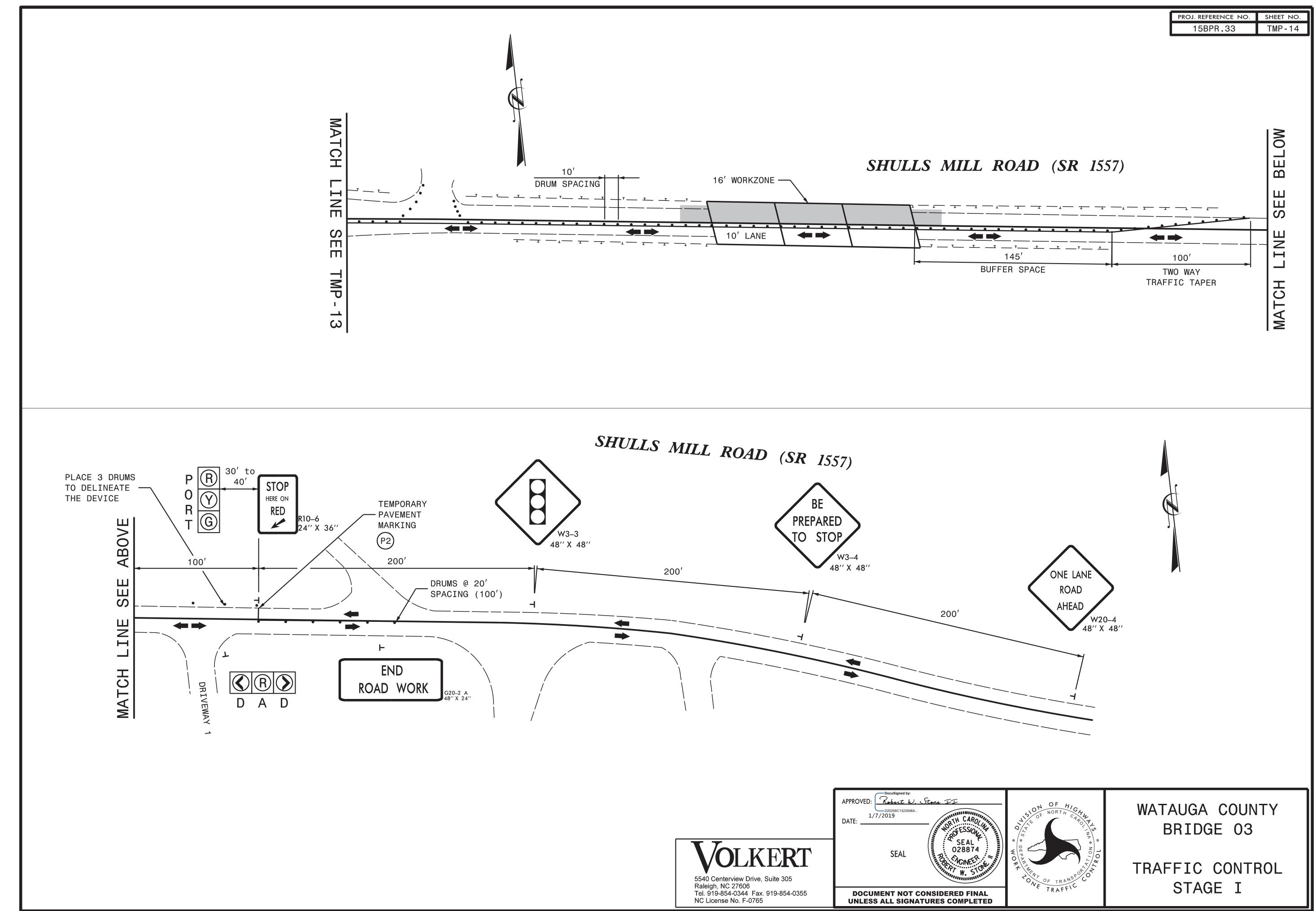




WATAUGA COUNTY BRIDGE 03

TRAFFIC CONTROL STAGING





PROJ. REFERENCE NO. TMP - 15 15BPR.33 **END** PLACE 3 DRUMS ROAD WORK TO DELINEATE — II. THE DEVICE SHULLS MILL ROAD (SR 1568) 200′ 200′ 10 LANES DRUMS @ 20' SPACING (100') TEMPORARY **PAVEMENT** STOP MARKING **PREPARED** ONE LANE NEXT RIGHT 42" X 12" DRUMS @ 20' SPACING (100') OLD SHULLS MILL ROAD ONE LANE BRIDGE 200′ 48′′ X 48′′ **END** ROAD WORK NEXT LEFT G20–2 A 48'' X 24'' SP-4L ABOVE TEMPORARY PREPARED 42" X 12" - PAVEMENT TO STOP MARKING (P2) 48'' X 48'' SEE PLACE 3 DRUMS TO DELINEATE THE DEVICE INE CONCRETE ISLAND MATCH **SHULLS** APPROVED: Robert W. Stone II MILL ROAD (SR 1557) WATAUGA COUNTY D20256C1323546A... 1/7/2019 BRIDGE 03 OLKERT TRAFFIC CONTROL 5540 Centerview Drive, Suite 305 Raleigh, NC 27606 Tel. 919-854-0344 Fax. 919-854-0355 NC License No. F-0765 STAGE II DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

